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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,718	02/11/2004	Gil-Yong Park	5000-1-513	2825

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EXAMINER

TAYONG, HELENE E

ART UNIT	PAPER NUMBER
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2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/776,718

Applicant(s)

PARK ET AL.

Examiner

Helene Tayong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/11/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: In claim 6, line 5, change the word **and** to "**on**". Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being anticipated by Masashi et al. (5574714)

As shown in figure 3 and 4, Masashi et al. discloses an automatic gain control (AGC) apparatus having a short settling time in a burst mode optical receiver, comprising:

(1) with regards to claim 1;

a variable gain amplifier(10) for variably amplifying an input signal according to an AGC adjustment control signal (col. 2, lines 62-63);

a clipper(15) coupled to an output terminal of the variable gain amplifier for comparing an output signal of the variable gain amplifier with a preset signal V_{cut} and for outputting a signal difference when the output signal of the variable gain amplifier is higher than or equal to the preset signal V_{cut} in amplitude (col. 3 lines 23-25);

an exponential amplifier (11 and 16) for exponentially amplifying an output signal of the clipper (col.3,lines 22-31).; and

a peak holder (13) for detecting a peak value from an output signal of the exponential amplifier(16) and for generating the AGC adjustment control signal for controlling a gain of the variable gain amplifier (col.3,lines 22-31).

(2) with regards to claim 2;

a voltage controlled variable resistor (VCVR) coupled in parallel to the peak holder for creating a current leakage path and for preventing over current from flowing in the peak holder when the output signal of the exponential amplifier is larger than or equal to a preset threshold (col.3, lines 49-58).

(3) with regards to claim 3;

a peak value detector (12) for converting a DC (Direct Current) level of an output signal of the exponential amplifier so that the DC level of the output signal of the exponential amplifier is matched to a DC level of the peak holder (col. 3, lines 11-21);
and

a peak value keeper for keeping a peak value of the output signal of the exponential amplifier and for generating the AGC adjustment control signal to control a gain of the variable gain amplifier from the kept peak value (col. 3, lines 32-39).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being obvious over Masashi et al. (5574714) in view of Doh et al (US6911644B2).

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

(1) with regards to claim 4;

Masashi et al. discloses all of the subject matter as described above except for specifically teaching wherein the peak value keeper initializes the kept peak value according to an initialization signal.

However, Masashi et al. in the same field of endeavor, teaches wherein the peak value keeper initializes the kept peak value according to an initialization signal (col. 5, lines 3-11).

In the burst-mode optical receiver, a pre-amplifier together with optical detector form a front-end of the receiver such that the pre-amplifier can convert an input optical signal to an electrical signal and then amplify the signal with minimum level noise. Pre-amplification affects the overall receiving sensitivity of the optical receiver. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize peak value keeper of Doh et al's in the apparatus of Masashi et al to reduce the effective gain for a larger input signal. The motivation to utilize Doh et al's peak value keeper in the apparatus of Masashi et al was to improve the overall load characteristic.

(2) with regards to claim 5;

Masashi et al. discloses all of the subject matter as described above except for specifically teaching wherein, upon receiving a signal that there is no more data input to the AGC apparatus, the initialization signal is delivered to initialize the peak value keeper in order to detect a new peak value when the next data is received.

However, Masashi et al. in the same field of endeavor, teaches wherein, upon receiving a signal that there is no more data input to the AGC apparatus, the initialization signal is delivered to initialize the peak value keeper in order to detect a new peak value when the next data is received (col.5, lines 21-39).

In the burst-mode optical receiver, a pre-amplifier together with optical detector form a front-end of the receiver such that the pre-amplifier can convert an input optical

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signal to an electrical signal and then amplify the signal with minimum level noise. Pre-amplification affects the overall receiving sensitivity of the optical receiver. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the initialization signal that is delivered to initialize the peak value keeper of Doh et al's in the apparatus of Masashi et al to reduce the effective gain for a larger input signal. The motivation to utilize Doh et al's initialization signal in the apparatus of Masashi et al was to improve the overall load characteristic.

(3) with regards to claim 6;

Masashi et al. discloses all of the subject matter as described above except for specifically teaching wherein a first transistor having a base receiving an output signal of the variable gain amplifier, a collector connected in common to a supply voltage V_{cc} and one end of a first resistor, and an emitter connected in common to an emitter of a second transistor and one end of a second resistor; a second transistor having a base receiving a specific voltage value corresponding to a preset clipping value, a collector connected to another end of the first resistor, and an emitter connected in common to the emitter of the first transistor and one end of the second resistor; the first resistor having one end connected in common to the collector of the first transistor and the supply voltage V_{cc} , and another end connected to the collector of the second transistor; and the second resistor having one end connected in common to the emitter of the first transistor and the emitter of the second transistor, and another end grounded.

However, Doh et al. in the same field of endeavor, teaches a first transistor having a base receiving an output signal of the variable gain amplifier, a collector

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connected in common to a supply voltage V_{cc} and one end of a first resistor, and an emitter connected in common to an emitter of a second transistor and one end of a second resistor (col. 5, lines 3-11); a second transistor having a base receiving a specific voltage value corresponding to a preset clipping value, a collector connected to another end of the first resistor, and an emitter connected in common to the emitter of the first transistor and one end of the second resistor (col.4, lines 18-38); the first resistor having one end connected in common to the collector of the first transistor and the supply voltage V_{cc} , and another end connected to the collector of the second transistor (fig.6, col.5, lines 16-39); and the second resistor having one end connected in common to the emitter of the first transistor and the emitter of the second transistor, and another end grounded (fig.6, col.5, lines 16-39).

Digital data output from computers typical of information processing equipment has a bursty characteristic, i.e. data is output intensively for a certain period of time and no data is output for the remaining period of time. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the clipper and exponential amplifier of Doh et al in order to provide an optical receiver circuit which does not deteriorate in a burst data receiving state. The motivation to utilize Doh et al's clipper and exponential amplifier in the apparatus of Masashi et al was to provide an optical receiver circuit capable of receiving burst data with high stability.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ide et al (US 6292058B1) disclose signal amplifying circuit connected to a transfer circuit having a known non-linear transfer characteristic.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Tayong whose telephone number is 571-270-1675. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lui Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Helene Tayong

4/2/07



SHUWANG LIU
SUPERVISORY PATENT EXAMINER